

Applicant : Elliott Bennett-Guerrero et al.  
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56. (retained) The method of claim 55 in which the composition comprises *E. coli* K12 Ra LPS in a liposome.

57. (retained) The method of claim 55 in which the composition comprises a cocktail of Ra LPSs from multiple species of Gram-negative bacteria incorporated in liposomes.

C 2  
58. (amended) The method of claim 44 or claim 57 in which the cocktail comprises Ra LPSs from at least three strains of Gram-negative bacteria, each of said strains being classified in a different one of the following classifications: *E. coli* K12, *E. coli* R1, *Bacteroides fragilis*, and *Pseudomonas aeruginosa*.

59. (retained) The method of claim 44 in which one of said bacterial strains is classified as *E. coli* K12.

61. (retained) The method of claim 59 in which the animal is a mammal.

62. (retained) The method of claim 61 in which the animal is a human patient.

63. (retained) The method of claim 59 in which the composition comprises LPS of an Ra rough *E. coli* K12.

C 3  
64. (amended) The method of claim 44 in which both of said at least two bacterial strains are classified as *E. coli*.

C 4  
66. (amended) The method of claim 44 or claim 59 in which the composition comprises complete-core, rough, LPS antigen from a third Gram-negative bacterial strain different from the first and from the second Gram-negative bacterial strains.

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67. (retained) The method of claim 66 in which the composition comprises complete-core, rough, LPS antigen from a fourth Gram-negative bacterial strain different from each of the first, the second, and the third Gram-negative bacterial strains.

68. (retained) The method of claim 59 in which the other of said Gram-negative bacterial strains is *E. coli* R1.

73. (retained) The method of claim 67 in which complete core antigen from each of the four bacterial strains is present in generally equal amounts by weight.

74. (retained) The method of claim 66 in which the composition comprises LPS antigens from at least two different Gram-negative bacterial strains of the same species.

75. (retained) The method of claim 59 in which the antigens cause the patient to produce an antibody that binds to an epitope in the core region of the LPS of at least one Gram-negative bacterial strain whose LPS is not part of the composition.

76. (retained) The method of claim 75 in which the patient's antibody binds to the LPS of at least one smooth Gram negative bacterial strain.

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78. (amended) The method of claim 55 in which the ratio (weight:weight) of lipid in the liposome to the LPS antigens is between 1:1 and 5000:1.

C 5  
79. (amended) The method of claim 55 in which the ratio (weight:weight) is between 10:1 and 1000:1.

80. (amended) The method of claim 55 in which the liposome comprises a component selected from the group consisting of: phospholipid, cholesterol, positively charged compounds, negatively charged compounds, and amphipathic compounds.

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81. (amended) The method of claim 55 in which the liposome is a multilamellar type liposome (MLV).

82. (amended) The method of claim 55 in which LPS in the acid salt form is incorporated into the liposome.

83. (amended) The method of claim 55 in which the liposome is a small or large unilamellar liposome (SUVs and LUVs).

84. (retained) The method of claim 44 in which the composition is administered intramuscularly, intravenously, subcutaneously, intraperitoneally, via the respiratory tract, or via the gastrointestinal tract.

85. (retained) The method of claim 44 in which the dose of antigen is over 0.01 ng per kilogram of patient body weight.

86. (retained) The method of claim 85 in which the dose is less than 1000 ng per kilogram of patient body weight.

87. (retained) The method of claim 85 in which the dose is less than 100 micrograms per kilogram of patient body weight.

88. (retained) The method of claim 44 in which the composition is administered in multiple doses, the first of which is administered at least 2 days prior to potential endotoxin exposure.

93. (retained) The method of claim 44 in which the composition further comprises an adjuvant.

94. (retained) The method of claim 93 in which the adjuvant is alum.

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97. (retained) A method of quantitating lipopolysaccharide incorporated into liposomes by performing periodic acid/Schiff base staining.

98. (retained) The method of claim 97 in which the test is performed on a vaccine lot intended for clinical use.

99. (retained) A method of reducing adverse effects of endotoxin in a warm-blooded animal, which method comprises administering to the warm-blooded animal an effective amount of antibody produced by immunization with a composition according to claim 44 or claim 59.

100. (retained) The method of claim 99 in which the antibody comprises a substantial percentage of IgM antibody.